

Fort Ancient Culture Ceremonial and Domestic Sites: Serpent Mound Geoglyph and SunWatch Village

**A Nomination for the Tentative List of
the World Heritage Program
March 2007**



Ohio Historical Society
1982 Velma Avenue
Columbus, Ohio 43211



SunWatch Indian Village/Archaeological Park
2301 West River Road
Dayton, Ohio 45418



OMB Control #: 1024-0250

Exp. Date: 08/31/2009

**APPLICATION FOR INCLUSION OF A PROPERTY
IN THE U.S. WORLD HERITAGE TENTATIVE LIST**

**Fort Ancient Culture Ceremonial and Domestic Sites:
Serpent Mound Geoglyph and SunWatch Village**

Prerequisite 1 - Legal Requirements:

A. National Significance:

Has the property been formally determined to be nationally significant for its cultural values, natural values, or both (in other words, has it been formally designated as a National Historic Landmark, a National Natural Landmark, or as a Federal reserve of national importance, such as a National Park, National Monument, or National Wildlife Refuge)? If not, are there on-going processes to achieve any of the above designations and what is their status? (*Listing in the National Register of Historic Places is not equivalent to National Historic Landmark status.*)

YES: X NO:

Comment: Serpent Mound and the SunWatch Site both are National Historic Landmarks.

B. Owner Concurrence:

Are all the property owners aware of this proposal for the inclusion of the property in the U.S. Tentative List and do all of the property owners agree that it should be considered? If any agreement is uncertain or tentative, or if the ownership situation is disputed, otherwise complicated, or unclear, please explain the issues briefly.

YES: X NO:

Comment: Boards of both the Ohio Historical Society and the Dayton Society of Natural History and the Dayton City Commission have approved the submission of the nomination.

C. Willingness to Discuss Protective Measures:

Alligator Mound, Licking County, Ohio;

Edington Mound, Clermont County, Ohio;

Madisonville site, Hamilton County, Ohio;

Tarleton Cross Mound, Fairfield County, Ohio;

Voss Mound, Franklin County, Ohio.

F. Serial (multi-component) Properties:

Are you proposing this property as an extension of or a new component to an existing World Heritage Site?

YES: _____ NO X

Name of Existing Site:

Prerequisite 3 - Other Requirements:

G. Support of Stakeholders

In addition to owners, please list other stakeholders and interested parties who support the property's proposed inclusion in the Tentative List. Also note any known to be opposed.

Explanation: The purpose of the Tentative List is to propose candidate properties that are likely to be successfully nominated during the next decade. It is clear that a consensus among stakeholders will be helpful in nominating a site and later in securing its proper protection. Thus, only properties that enjoy strong, preferably unanimous, support from stakeholders will be recommended for inclusion in the U.S. Tentative List.

In addition to owners, stakeholders primarily include:

--Governors, Members of Congress and State legislators who represent the area where the property is located,

--the highest local elected official, or official body, unless there is none,

--Native Americans, American Indian tribes, or other groups and individuals who possess legally recognized claims or privileges in the area or at the site being proposed (e.g., life tenancy or hunting and fishing rights),

--organizations established to advocate for protection and appropriate use of the property proposed for nomination.

If definitive information is not available at the time you filled out this Questionnaire, please so indicate.

Supporters: Ohio Legislature; Governor of Ohio; Board of Trustees and Executive Director of the Ohio Historical Society; Board of Trustees, Chair and President of the Dayton Society of Natural History; City of Dayton; Montgomery County Board of Commissioners; Adams County Commissioner; Native American Indian Center (Columbus, Ohio); Archaeological Conservancy; Archaeological Society of Ohio; Ohio Archaeological Council; Adams County Convention and Visitors Bureau; Montgomery County Convention and Visitors Bureau. Endorsements are attached as Appendix 4. Letters of support from the public are incorporated in Appendix 5 which is bound separately.

Public meetings were held in both communities. Universal support was expressed from all attendees. Prior to the meetings, various means were used to encourage participation.

Opponents: None identified

Comment: Other stakeholders have been contacted, such as Federally-recognized Indian Tribes with historic ties to Ohio, but they have not commented.

Information Requested about Applicant Properties

(The numbers of the sections and subsections below are in the same order as and correspond to sections of the World Heritage Committee's official Format used for the nomination of World Heritage Sites. This is to allow easy reference to and comparison of the material.)

1. IDENTIFICATION OF THE PROPERTY OR PROPERTIES

1.a. Country:

If it is intended that the suggested nomination will include any properties in countries other than the United States, please note the countries here.

Explanation: Please note that the United States can nominate only property under U.S. jurisdiction. You are not expected to contact other governments and owners abroad, although you may do so if you wish. Each national government must nominate its own sites, although the United States will consider forwarding your suggestion to another government for that government to consider as a joint nomination with the United States.

Names of countries: United States of America

1.b. State, Province or Region:

In what State(s) and/or Territories is the property located? Also note the locality and give a street address if one is available.

Serpent Mound:

Serpent Mound State Memorial, 3850 S.R. 73, Peebles, OH, 45660 (Bratton Township, Adams County, Ohio)

SunWatch Site:

SunWatch Indian Village/Archaeological Park, 2315 West River Rd., Dayton, OH, 45418 (Harrison Township, Montgomery County, Ohio)

1.c. Names of Property:

What is the preferred or proposed name of the property or properties proposed for nomination? If the site has multiple names, explain why you chose the primary choice or choices. *(The name should not exceed 200 characters, including spaces and punctuation.)*

Serpent Mound

SunWatch Site

Popular and Historic names

What are any popular or historic names by which the property is also known?

The nomination includes two archeological preserves: Serpent Mound (Ohio Historical Society) and the SunWatch Site (Dayton Society of Natural History).

Serpent Mound: The Great Serpent Mound

SunWatch Site: SunWatch Indian Village/Archaeological Park; the Incinerator Site

Naming of serial (multiple component) properties and transboundary sites.

Try to choose brief descriptive names. In the case of serial nominations, give an overall name to the group (e.g., *Baroque Churches of the Philippines*). *(Give the names of the individual components in a table that you insert under If.)*

Group or Transboundary Name:

Fort Ancient Culture Ceremonial and Domestic Sites

Other names or site numbers

Explanation: If a site has multiple names, explain why you chose the primary choice or choices. If the site has no common name or is known only by a number or set of numbers, please explain.

Serpent Mound: Ohio Archaeological Inventory number: 33-AD-1

SunWatch Site: Ohio Archaeological Inventory number: 33-MY-57.

SunWatch Site has been chosen as the primary name because it is known to the public as SunWatch and it is listed as a National Historic Landmark under the name SunWatch.

1.d.-e. Location, boundaries, and key features of the nominated property

Include with this **Application** sketch maps or other small maps, preferably letter-size, that show:

- the location of the property
- the boundaries of any zones of special legal protection
- the position of major natural features and/or individual buildings and structures
- any open spaces (squares, plazas) and other major spatial relationships (the space between buildings may at times be more important than the buildings)

Please provide here a list of the maps that you have included.

Location map showing the location of Serpent Mound and the SunWatch Site in Ohio

Ownership/proposed boundary map of Serpent Mound

Ownership/proposed boundary map of the SunWatch Site

1.f. Area of nominated property (ha.)

Explanation: State the approximate area proposed in hectares (1 hectare=2.471 acres). Give corresponding acre equivalents in parentheses. Insert just below this question a table for serial nominations that shows the names and addresses of the component parts, regions (if different for different components), and areas.

Serpent Mound: 21.9 ha (54 acres) Ohio Historical Society ownership

SunWatch Site: 11 ha (27 acres) City of Dayton/Dayton Society of Natural History ownership

2. DESCRIPTION AND HISTORY OF THE PROPERTY

2.a. Description of the Property

(select the one following category that best fits the property)

Cultural property

Briefly describe the property and list its major components. A summary in a few paragraphs or pages should be all that is required.

Explanation: This section can describe significant buildings, their architectural style, date of construction, materials, etc. It can also describe the setting such as gardens, parks, associated vistas. Other tangible geographic, cultural, historic, archeological, artistic, architectural, and/or associative values may also merit inclusion.

Background

The Fort Ancient culture (circa AD 1000 to 1650) is a significant regional expression of the Late Prehistoric Period (AD 900 to 1650) in central and southern Ohio as well as adjoining parts of West Virginia, Kentucky, and Indiana. Relatively large, nucleated villages, often surrounded by a palisade, earthen wall, or ditch typify Fort Ancient culture settlements. The villages were sustained by extensive gardens of maize, beans, and squash, supplemented by fishing, hunting, and gathering wild plant foods. The culture is contemporary with the Mississippian Period cultures of eastern North America, such as the one that built the Cahokia World Heritage Site. The Mississippian cultures are differentiated from the Fort Ancient culture by the larger size and the relatively greater socio-cultural complexity of the metropolitan chiefdoms of the Mississippi Valley and the southeastern United States.

The increasing commitment to an agricultural way of life led to a need for specialized knowledge of the seasonal calendar so that the maize especially would be planted neither too soon nor too late in the year. The Fort Ancient people developed a solar calendar adapted for the special requirements of maize agriculture from the astronomical knowledge of earlier cultures, such as the Hopewell (circa 100 BC – AD 400). Their calendar was used to determine the timing of planting and harvest and the various religious rituals and festivals that accompanied these pivotal points in the seasonal cycle. The shaman, always a respected member of society, may have taken on new leadership responsibilities in Fort Ancient societies.

The most visible and notable expressions of Fort Ancient ritual today are the effigy mounds of the Ohio Valley. Serpent Mound is the largest and best known of those.

Others effigies include Alligator Mound in Licking County, Ohio, and several stone serpent effigies in southern Ohio and northern Kentucky.

The best-preserved and most thoroughly studied habitation site of the culture that built Serpent Mound is the SunWatch site.

Serpent Mound:

Serpent Mound State Memorial encompasses the monumental Serpent Mound. This serpent effigy is the largest surviving example of a prehistoric serpent effigy mound in North America and perhaps the world. It is a sinuous earthen embankment over 397 meters long with a 37 by 18 m oval embankment at the northwest end. The oval has been interpreted variously as the serpent's eye, part of its head, or an object grasped in the serpent's open jaws. The effigy ranges from 1.2 to 1.5 m in height and from 6 to 7.6 m in width. Serpent Mound is situated on a ridge, which is a part of a geologically ancient meteoric impact crater approximately 8 km in diameter. Natural rock formations at the end of this finger-like ridge are suggestive of a reptilian head, which may have provided the inspiration for the idea to build the serpent effigy along the top of the ridge.

The state memorial also preserves three Native American burial mounds as well as evidence of contemporary habitation sites of the builders of both the Serpent and the burial mounds. One of the burial mounds is an "Elliptical mound," attributable to the builders of the Serpent, and the other two burial mounds are simple conical mounds attributable to the earlier Adena culture (800 BC – AD 100).

SunWatch Site:

The SunWatch site, dating to between AD 1200-1300 in the middle of the Fort Ancient period, preserves a village of approximately 1.2 ha (3 acres) arranged in a circular pattern consisting of a series of concentric rings around a central plaza. The outer loop consists of a palisade that encircled and enclosed the village. Directly inside of the palisade was a ring of houses. Inside the ring of houses is a band of storage/trash pits, and inside of that zone were the burial grounds of the village. At the center of the village was a large open plaza. Whereas some other Fort Ancient culture villages appear to exhibit a circular community pattern, SunWatch is the only site where this layout has been confirmed.

At the center of the village plaza there was a complex of posts, including a huge central cedar pole that was 0.7 m in diameter and may have been more than 9 m in height. These posts appear to have been used for marking astronomical alignments that have been interpreted as seasonal indicators for the inhabitants of the village. Two main alignments have been inferred and include one alignment that marks the morning of the winter solstice and another that would have marked the beginning of both the planting and harvesting cycles for the villagers. The interpretation of other prehistoric astronomical features in the Americas (both contemporary with and predating the Fort Ancient culture)

suggests that prehistoric Americans had an intimate awareness of the astronomical cycles and that this interpretation of the center post complex at SunWatch is a reasonable and valid explanation for this feature.

SunWatch traditionally has been interpreted as a typical middle Fort Ancient period, single occupation agricultural village that would have been occupied for about 15-20 years and was reliant upon the crops that the villagers were growing as their primary source of food. Continuing research into the site, however, is beginning to suggest a longer term occupation of the site.

The extraordinary preservation at the SunWatch site has allowed the Dayton Society of Natural History to reconstruct five structures that are representative of the different types of buildings that archeologists have identified in the village. The structures have been meticulously reconstructed to match the structures that the villagers utilized. Using the archeological evidence the structures were reconstructed with grass lath and mud daub walls on a wood post frame with grass thatch roofs, also on a wood post frame. Two habitation structures have been reconstructed to illustrate family organization and responsibilities. Two ceremonial structures, located along the astronomical alignments, provide a setting to discuss village ceremonialism and the physical organization of the village. Another reconstructed structure has been interpreted alternatively as either a medicine lodge or a women's lodge. The different structures and their distinctive architectural features permit the discussion of the interpretive problems associated with the differing house layouts as found in the archeological record. Due to the organic nature of these materials they have left little evidence in the archeological record. The limited available evidence of the use of these materials comes from postmolds or soil discolorations that may have inclusions of wood, stone and charcoal; a few fragments of charred daub, some with the grass lath impressions intact; a few wood beam fragments; and charcoal. Along with the reconstructed houses the center pole complex also has been restored to illustrate the astronomical knowledge of the villagers and how it influenced village development.

The reconstructed houses and other features at SunWatch exemplify the living conditions of the villagers that lived here almost 800 years ago, and the repositioned posts in the village plaza demonstrate the astronomical alignments that have been interpreted at the site. The overall reconstruction of the village gives visitors an exclusive glimpse into what life was like in the Great Miami River Valley 800 years ago.

Archeological remains present at SunWatch indicate limited use of the area during the Paleoindian, Archaic, Woodland, and historic periods as well, though the most intensive occupation is the Fort Ancient period village.

Which features or aspects of the property do you believe qualify it for the World Heritage List?

Serpent Mound:

The Serpent effigy mound, as the largest and most aesthetically refined surviving prehistoric serpent effigy mound in North America, is the feature that qualifies the property for the World Heritage List. The associated burial mounds are important ancillary structures, but would not by themselves warrant the designation. In addition, there is evidence at the site of an Adena habitation area with an associated cemetery and an overlying, and more extensive, Late Prehistoric village site. Excavations conducted preparatory to the installation of a water line at the site in 1990 and 1991 found numerous intact features containing many artifacts associated with the Late Prehistoric period Fort Ancient culture. So, in addition to the evidence for the ceremonial use of the landscape embodied in the Adena burial mounds, cemetery, and Fort Ancient effigy mound and nearby burial mound, there is complementary evidence of the lifeways of the peoples who built the mounds preserved at the site.

SunWatch Site:

The feature of the SunWatch Site which qualifies it for the World Heritage List is the intact village site which is the best preserved and most extensively researched habitation site of the Fort Ancient culture. It has yielded unprecedented insights into the community plan of Fort Ancient villages and the architectural integration of monumental ritual structures with ordinary domestic life. The information gained from the extensive excavation at SunWatch has provided indispensable information on the Late Prehistoric period occupation of southern Ohio.

What are the important present or proposed uses of the property and how do they compare with the traditional or historic uses of it?

Serpent Mound:

Archeological data indicate the site was used for special ceremonies associated with the monumental serpent effigy. Based on ethnohistoric analogies, these ceremonies may have included offerings of thanksgiving or offerings made to elicit favors from the great serpent spirit, named *Mishebeshe* by the Ojibwa Indians. The site was also used for habitation and for burial of the dead. From the time of European settlement to 1887, the site was private property and used for a short time as agricultural land. Serpent Mound became the earliest site in the western hemisphere to be preserved as an archeological park in 1887 when the Peabody Museum of Harvard University purchased it. Today, Serpent Mound State Memorial is an archeological preserve used for public education and research.

SunWatch Site:

The archeological evidence suggests that SunWatch was a habitation site where approximately 250-300 individuals resided. The villagers at the site farmed the surrounding river valley relying primarily on the maize that they grew in their gardens for their subsistence. The circular layout and features present within the village suggest that

the villagers organized their settlement to mark astronomical alignments that coincided with significant communal activities throughout the year.

SunWatch is currently utilized for continuing research into the Fort Ancient period which includes targeted excavation, continuing analyses of collections and the experimental reconstruction of some of the structures and other features in the 800-year-old footprint of the original village.

SunWatch is also used as a public education center. The partially reconstructed Native American village, activities, and exhibits recognize the traditional use of the site while offering the public a venue where they can learn about and appreciate this Native American group which lived in the area prior to European settlement.

2.b. History and Development of the Property

Cultural property

When was the site built or first occupied and how did it arrive at its present form and condition? If it has undergone significant changes in use or physical alterations, include an explanation.

Explanation: If the property was built in stages or if there have been major changes, demolitions, abandonment and reoccupation, or rebuilding since completion, briefly summarize these events. For archeological sites, the names of archeologists and dates of their work should also be noted, especially if the site is regarded as important in the history of archeology as well as for its intrinsic merits.

Introduction:

Serpent Mound and the SunWatch Site represent the best preserved, most extensively studied, and most visually impressive legacy of the 1,000-to-400-year-old Fort Ancient culture. Together, they present a spectrum of Fort Ancient lifeways, from domestic village life to the construction and use of a monumental ceremonial geoglyph.

Serpent Mound:

The most recent and best evidence indicates that Serpent Mound was built by the Fort Ancient culture (AD 1000-1650), although some authorities argue that it was built by the earlier Adena culture (800 BC – AD 100). Certainly, the Adena culture identified this area as culturally significant and constructed two burial mounds in the immediate vicinity.

Serpent Mound was first documented in 1848 by Ephraim Squier and Edwin Davis in "Ancient Monuments of the Mississippi Valley," the first publication of the Smithsonian Institution. At this time, the mound was virtually pristine with the exception of one act of looting. Squier and Davis reported that a "circular elevation of large stones much burned" once had existed within the oval enclosure, but it had "been thrown down and

scattered" by a vandal. In 1859, a tornado passed over the site uprooting the trees growing on the mound. Subsequently, the landowner cultivated the site, including Serpent Mound, for a few seasons. Later, the mound and the surrounding area were used for livestock grazing. Frederic Ward Putnam, of Harvard University's Peabody Museum, first visited Serpent Mound in 1883. His photographs indicate the mound had been reduced in height from 4-5 ft (1-1.5 m) to 2-3 ft (0.6-0.9 m), but the outlines were intact and clearly discernable.

When he returned to Serpent Mound in 1886, Putnam found that looters had dug several holes in the embankment, which had been left unfilled. Putnam was instrumental in raising funds to purchase the property and, in 1887, the Peabody Museum acquired the site. From 1887 to 1889, Putnam conducted systematic investigations of portions of the effigy, the adjacent burial mounds, and parts of the surrounding landscape. After concluding his research, he carefully restored the mounds.

The Peabody Museum converted the property into a public park and operated it as such until 1900, when it was deeded to the Ohio Archaeological and Historical Society (now the Ohio Historical Society). In 1908, an observation tower was built and during the 1930's a museum and other visitor facilities were built.

Between 1990 and 1992, the Ohio Historical Society conducted a series of excavations along a proposed waterline. This projected line extended near the small conical burial mound located south of the effigy mound and across the area identified by Putnam as the village site. A number of features were uncovered most of which yielded ceramics and flint tools assignable to the Fort Ancient culture. These results also indicated that a great deal of the subsurface archeology at the site remained intact beneath a shallow layer of cultivated soil.

In 1991, avocational archeologists Robert Fletcher and Terry Cameron, assisted by professional archeologists Bradley Lepper, Dee Anne Wymer, and William Pickard undertook a limited excavation of one of Putnam's old trenches in order to obtain charcoal samples to use in radiocarbon dating. This investigation resulted in radiocarbon dates that indicate the effigy mound was built between 990 and 850 years BP (cal A.D. 995 and 1265).

SunWatch Site:

Archeological evidence suggests that the SunWatch Site was a Fort Ancient culture habitation site where approximately 250-300 individuals resided between about A.D. 1200 and 1250. The villagers at the site farmed the surrounding river valley relying primarily on the maize that they grew in their gardens for their subsistence. The circular layout and features present within the village suggest that the villagers organized their settlement to mark astronomical alignments that coincided with significant communal activities throughout the year.

From the early 1800s until the 1970s the property was used primarily as an agricultural field. The preservation of the site was insured by approximately 30 cm (12 inches) of sediment deposited by intermittent flooding of the Great Miami River since the abandonment of the village. These flood deposits, and the resulting depth of the site, protected the site from destruction by historic plowing of the property as well as from looting by non-professionals.

While the site was apparently known to archeologists at least as early as 1914 (Mills 1914), no actual archeological investigations were carried out until the 1960s when amateur archeologists John Allman and Charles Smith conducted the first excavations at the site. These excavations identified the remains of houses, the first indication of a long-term settlement at the site.

In 1970, the City of Dayton, which acquired the property in 1957, announced plans to build sewage treatment ponds on the site, prompting the initiation of salvage excavations by the Dayton Society of Natural History in 1971. Under the direction of J. Heilman of the Dayton Society of Natural History, local volunteers, students and museum staff worked on the excavation to glean as much information as possible prior to the proposed construction of the sewage ponds. Subsequent contracts allowed the museum to continue excavations and by 1974 enough of the village had been uncovered and enough information had been collected to support the nomination of the site to the National Register of Historic Places.

The site was officially added to the National Register in 1975. That, combined with the public interest and involvement in the site, convinced the City of Dayton to alter its plans, allowing the site to be preserved. At that point the excavation strategy evolved from a salvage operation to a concentration on research and preservation. It was also at this point that plans for reconstruction of the village as a public venue began to be discussed as well.

The remarkable degree of preservation at the site allowed the Dayton Society of Natural History to reconstruct several structures and other features on the exact footprint of the village. This innovative interpretive effort began in 1981. The educational programming also included the replication of a native garden and restoration of some of the area around the village to native prairie.

In May of 1982, the City of Dayton and the Dayton Society of Natural History agreed to a lease that could be renewed indefinitely that provided for the preservation, continued research and public interpretation of the site. In 1988, the Heilman-Kettering Interpretive Center was built to provide the public an introduction to the partially reconstructed village site and the Fort Ancient culture. Continued reconstruction and excavation and expansion of the Interpretive Center since that time have fostered continued learning about the Fort Ancient culture.

2.c. Boundary Selection

Propose a boundary for the property and explain why you chose it. Is the boundary reasonable on logical grounds, such as if it conforms to topography or landforms or (for natural areas) to the range of wildlife or (for cultural properties) to any historical boundary or defining structures (such as walls)?

Serpent Mound:

The boundary corresponds to the property acquired by the Peabody Museum and now owned by the Ohio Historical Society. It encompasses the effigy mound, burial mounds, and much of the surrounding land. The entirety of the prominent bluff on which the effigy is situated is included. These boundaries provide a reasonable buffer for preserving the effigy mound in its environmental context.

SunWatch Site:

The boundary corresponds to the property that is leased by the Dayton Society of Natural History from the City of Dayton. This includes the village site as well as the site of the interpretive center and surrounding prairies that are being restored to a native state. This area provides a suitable buffer for preserving the archeological site in its environmental context.

Are all the elements and features that are related to the site's significance included inside the proposed boundaries?

Explanation: Careful analysis should be undertaken to insure that the proposal embraces the internationally significant resources and excludes most, if not all, unrelated buildings, structures and features.

YES: X NO:

If no, please explain: _____

Are there any enclaves or inholdings within the property and, if so, do they contain uses or potential uses contrary to the conservation or preservation of the site as a whole?

YES: _____ NO: X

If yes, please explain: _____

3. JUSTIFICATION FOR INSCRIPTION IN THE WORLD HERITAGE LIST

3.a. Criteria under which inscription is proposed

From the World Heritage criteria listed below, identify each criterion that you believe applies to your property and briefly state why you believe each criterion you have selected is applicable.

*Explanation: You may find the discussion under this heading in "Appendix A" to the **Guide to the U.S. World Heritage Program** to be helpful in completing this section. Please refer to a paper copy or follow the hyperlink.*

To be included on the World Heritage List, a site must be of outstanding universal value and meet at least one of these ten selection criteria in a global context:

- i. *represent a masterpiece of human creative genius;*

 X This criterion applies to the property I am proposing

Reason:

Serpent Mound:

As an artistically striking, monumental, sculptural rendering of a serpent, Serpent Mound represents a masterpiece of human creative genius. It is the largest serpent effigy mound in North America and possibly the world. The iconography is consistent with the importance of serpents in the art of the Mississippian/Late Prehistoric period in eastern North America.

The head of the Serpent is aligned to the setting sun on the Summer Solstice. Moreover, each of the three coils of the serpent's body appears to be aligned respectively to the Summer solstice sunrise, the Equinox sunrise, and the Winter Solstice sunrise. The orientation to the sun also is consistent with Mississippian/Late Prehistoric architecture, such as the woodhenges at Cahokia Mounds World Heritage Site and the SunWatch Site.

The scale and elegance of Serpent Mound are unprecedented. Monumental earthworks on this scale ceased to be built after about AD 1200-1400, although the iconography of serpents continued to be important to historic Native American tribes in the region, reflecting some degree of cultural continuity.

Anthony Aveni, in *Between the Lines* (University of Texas, 2000), an analysis of the geoglyphs of Peru, suggests that Serpent Mound and the effigy mounds of the Upper Midwest may have been built to represent constellations. In the case of Serpent Mound, the outline of the serpent has been claimed to correspond to Ursa Major.

Today, Serpent Mound is a continuing source of inspiration. Modern artists, such as Robert Smithson, Michael Heizer, and Andy Goldsworthy, have based some of their work on this massive ancient sculpture.

- ii. *exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;*

____ This criterion applies to the property I am proposing

Reason:

- iii. *bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;*

 X This criterion applies to the property I am proposing

Reason:

Serpent Mound:

Serpent Mound is the site that best reflects the iconographical interests and spiritual beliefs of Native American peoples of the Fort Ancient culture, which flourished during the Mississippian/Late Prehistoric period (circa AD 900-1650). Only one other earthen animal effigy mound was built in Ohio (Alligator Mound) and it also dates to this cultural period. Several smaller linear stone mounds, argued by some to represent serpent effigies, also were constructed by the Fort Ancient culture. Serpent Mound appears to encode several astronomical alignments in the orientation of its head and coils. The head points to the azimuth of the setting sun on the summer solstice and its coils appear to be aligned with the summer solstice sunrise, the equinox sunrise, and the winter solstice sunrise. At least two of the better studied stone serpent effigies (Kern effigy #1 and #2 in Warren County, Ohio) are also aligned to the rising and setting of the sun on significant "hinges" of the solar cycle. The importance of solar aligned monuments is repeated at numerous other sites of this era, including the approximately contemporary woodhenges at the SunWatch site and at the Cahokia Mounds World Heritage Site in Illinois.

SunWatch Site:

SunWatch Village represents the most complete and clearly defined representation of Fort Ancient period village planning known for this culture. According to Drooker (2000:250) circular or ovoid plans are evident at sites spanning the Fort Ancient period, and that almost all sites where a significant portion of the site has been mapped exhibit a circular site plan. While the circular layout has been identified at other Fort Ancient village settlements, SunWatch is the only site where the combination of preservation and excavation has allowed for the identification of astronomical alignments as part of the community plan.

Along with the identification of solar alignments at Serpent Mound, the layout of SunWatch Village provides further evidence of the importance of solar alignments to the Fort Ancient inhabitants of southern Ohio. The alignments interpreted at SunWatch suggest that the Fort Ancient villagers not only pre-planned their village, but that they then relied on the recognition of these alignments to guide their seasonal celebrations and ceremonies. These alignments would have been important in the identification of significant events associated with the agricultural cycle, such as planting and harvesting, as well as seasonally noteworthy events such as the winter solstice.

- iv. *be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;*

 X This criterion applies to the property I am proposing

Reason:

Serpent Mound:

Serpent Mound is the foremost and best-known expression of effigy mound building in North America and, perhaps, the world. Perhaps inspired by the more numerous, but spatially separate, effigy mounds of the Upper Midwest, its form, positioning, and alignments represent a unique integration of cosmological beliefs, monumental sculpture and landscape design. As an iconic geoglyph, it is comparable to the Lines and Geoglyphs of Nasca and Pampas de Jumana World Heritage site.

SunWatch Site:

The SunWatch Site is the best example of the village plan utilized by the Fort Ancient inhabitants of southern Ohio. It is an outstanding example of traditional Fort Ancient period settlement and land use. Fort Ancient period village sites in southern Ohio tend to cluster on or directly adjacent to the floodplains of major drainages. These locations were ideal for access to fertile land which would have been important to communities who based their subsistence, and hence their survival, on agriculture. As the first culture to rely almost exclusively on maize agriculture for their subsistence in this region, the river valley landscape provided the ideal environmental conditions for the success and survival of the Fort Ancient villagers.

With the location of the site on the flood plain of the Great Miami River it is representative of the settlement patterns evident throughout the period. The consistent use of the floodplain environment by Fort Ancient villagers to access fertile cropland, nearby woodland resources and, in the case of SunWatch, nearby prairie resources, demonstrates that SunWatch is emblematic of Fort Ancient land use and settlement strategies.

These locations would have been important to the Fort Ancient inhabitants not only for the arable land, but also for other nearby resources as well. Nearby woodlands were important sources of timber needed for house construction, firewood and tool material. In the case of SunWatch, environmental evidence indicates that nearby prairies provided the tall grasses that the villagers would have needed for lath in the walls of their structures and thatch for the roofs. The rivers also would have been important as a constant source of water for consumption, fish and other permanent and seasonal riverine animals, as well as a potential transportation and interaction corridor.

While the Fort Ancient inhabitants of the southern Ohio region, such as those at SunWatch, may have temporally exhausted the natural resources available to them, their practice of periodically relocating their settlements allowed the local environment to rejuvenate, allowing for significant resource utilization again within just a few generations as the natural processes of reclamation took effect.

- v. *be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;*

___ This criterion applies to the property I am proposing

Reason:

be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria);

___ This criterion applies to the property I am proposing

Reason:

- vii. *contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;*

___ This criterion applies to the property I am proposing

Reason:

be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;

___ This criterion applies to the property I am proposing

Reason:

- ix. *be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;*

_____ This criterion applies to the property I am proposing

Reason:

- x. *contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.*

_____ This criterion applies to the property I am proposing

Reason:

3.b. Proposed statement of outstanding universal value

Based on the criteria you have selected just above, provide a brief **Proposed Statement of Outstanding Universal Value** summarizing and making clear why you think the property merits inscription on the World Heritage List. If adopted by the World Heritage Committee, the statement “will be the key reference for the future effective protection and management of the property.”

*Explanation: This statement should clearly explain the **internationally** significant values embodied by the property, **not** its **national** prominence.*

*“**Outstanding Universal Value**” is formally defined as “... cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole.”*

Cultural property

For example, a cultural World Heritage Site may be a unique survival of a particular building form or settlement or an exceptional example of a designed town or the best work by a great internationally recognized architect. It may be a particularly fine or early or rich survival and it may bear witness to a vanished culture or way of life, or ecosystem. Elements to consider for inclusion in the statement may be such cardinal facts about the site as:

- *Historic Context*
- *Period of International Significance*
- *Internationally Significant Dates*
- *Internationally Significant Groups, Persons, Events*
- *Cultural Affiliation*

Serpent Mound and the SunWatch Site have universal value as the best preserved, most extensively studied, and most visually impressive legacy of the 400 to 1,000-year-old Fort Ancient culture. Serpent Mound is a monumental geoglyph embodying fundamental cosmological principles of this ancient American Indian culture. The SunWatch Site represents the recovery of an entire prehistoric community, including the town plan,

which integrates some of the same cosmological principles with domestic architecture. Together, they present a complementary picture of Fort Ancient worldviews as they were expressed in monumental art and daily life.

From a broader perspective, these sites illuminate the transition from a primarily hunting and gathering way of life to the more sedentary and structured societies based on agriculture, which had profound consequences on cultures around the world. This change did not take place overnight and did not manifest itself purely in economic terms. The process of identifying and domesticating economically desirable and productive plants took generations to accomplish, and not all cultures around the world chose to move in this direction. From the beginnings of plant domestication in the Middle East, almost 10,000 years ago, to the development of modern cultures, as the reliance on agriculture increased, complementary changes occurred in other aspects of society. A more sedentary way of life is one concomitant of such a process. As dependence on domesticated crops increased, people around the world recognized the need to invest more effort in the production and maintenance of the crops that provided a substantial portion, if not majority, of their dietary needs. The management of this effort and the distribution of the harvest resulted in the concentration of political and religious authority in small groups or individuals. Often, this authority was expressed in monumental architecture with cosmological alignments that appeared to provide supernatural justification for the inequalities inherent in the increasingly stratified social hierarchies.

The Fort Ancient culture that occupied southern Ohio and the surrounding regions between about AD 1000 and 1650 represents the pinnacle of indigenous agriculture in the Ohio Valley. The commitment to maize-based agriculture tied these people to a specific habitat that provided the environmental setting needed for their changing way of life. Political authority seems to have been somewhat more centralized than in earlier periods, though not as consolidated as in some contemporary Mississippian societies.

Serpent Mound represents the acme of effigy mound-building in eastern North America and perhaps the world. It has become an icon of prehistoric human cultural achievements in North America, principally because of its grandeur and its sense of immediate familiarity. Whatever else it represents, it is clearly a serpent and that recognition provides a connection between modern observers and the ancient builders of this huge, earthen effigy.

The SunWatch Site represents an exceptional example of the town planning by the same culture that built Serpent Mound. It is exceptional in the degree of its preservation, the extent to which it has been studied, and the way in which fundamental cosmological principles are encoded in its basic architecture. The circular pattern and concentric rings that define the village and the gigantic cedar post that defined its center point were used to complement and coordinate the ceremonial and communal responsibilities of the populace.

The depiction of the Serpent in the form of a massive, naturalistic geoglyph and the layout of communities such as SunWatch, designed to mark the passage of the seasons,

are examples of the responses of the Fort Ancient people to the opportunities and challenges that came with a commitment to maize agriculture and the concomitant rise of socio-cultural complexity. These constructions, and the astronomical alignments that have been identified at them, epitomize the attempts of the Fort Ancient people to align their communities to match their worldview in much the same way as peoples in places as distant as the World Heritage sites of Stonehenge, Copan, and Cahokia.

Note: The Fort Ancient culture was named for the Fort Ancient Earthworks, but those earthworks were not built by the Fort Ancient culture. The earthworks were built by the Hopewell culture (circa 100 BC-AD 400), but a Fort Ancient culture village and cemetery was established within the southern portion of Fort Ancient several centuries later. The 19th and early 20th century archeologists that discovered the village and cemetery mistakenly identified the Late Prehistoric villagers as the builders of the earthworks and named the culture after the site. Due to the conventions of scientific nomenclature, this blunder has been difficult to correct and remains the cause of some confusion.

Cultural landscapes

Such landscapes illustrate the evolution of human society and settlement over time under the influence of the physical constraints and/or opportunities presented by the natural environment and of successive social, economic, and cultural forces, both external and internal.

Natural property

For example, a natural World Heritage Site may be a unique existence of a type of habitat or ecosystem. It may comprise assemblages of threatened endemic species, exceptional ecosystems, outstanding natural landscapes or other natural phenomena.

Mixed property

A mixed property must be justified under at least one cultural criterion (i-vi) under 3a above and one natural criterion (vii-x) under 3a above.

3.c. Comparison of proposed property to similar or related properties (including state of preservation of similar properties)

Please provide a statement explaining how the property being proposed compares with all other similar or related properties anywhere in the world, whether already on the World Heritage List or not.

*Explanation: Examples of questions that may be useful to consider include whether the proposed property is part of a series or sequence of similar sites belonging to the same cultural grouping and/or the same period of history. Also, are there features that distinguish it from other sites and suggest that it should be regarded as **more, equally or jointly** worthy than they are? What is it that makes this property intrinsically better than others and qualifies it for the World Heritage List? For example, does it have more features, species or habitats than a similar site? Is the property larger or better preserved or more complete or less changed by later developments?*

It will be especially helpful if specific reference can be made to a study placing the property in a global context. The absence of comparative information may indicate that the property is either truly exceptional (a difficult case to prove) or that it lacks international importance. If the results of the comparative review reveal that multiple sites possess roughly comparable merit and may possess international significance as a group, you may wish to recommend that more than one site be proposed, as a serial nomination or as a joint nomination by the United States and another country.

Also please make note of any major works that evaluate the property in comparison to similar properties anywhere else in the world.

Serpent Mound:

Only two animal effigy mounds are known from this region (Serpent Mound and Alligator Mound) and both have yielded radiocarbon dates indicating they were built during the Late Prehistoric period (Fort Ancient culture). A large number of effigy mounds were built in the Upper Midwest by the so-called Effigy Mound Culture, between about AD 650 and 1300, making Ohio's effigy mounds contemporary with the later phases of this non-contiguous culture. It is likely the idea for constructing animal effigy mounds originated in the Upper Midwest, but Serpent Mound is the preeminent expression of effigy mound-building in North America.

Monumental geoglyphs, such as the Lines and Geoglyphs of Nasca and Pampas de Jumana World Heritage site, are known to exist throughout the world, but Serpent Mound is exceptional in terms of scale, artistic execution, and the integration of iconography, cosmology, and landscape.

SunWatch Site:

While numerous Fort Ancient period village sites are known to exist throughout the central Ohio River valley, only a few have been as well preserved. Of those, SunWatch is the most thoroughly investigated and best understood site. Compared to other Fort Ancient sites, it appears to be a single component site, minimizing the potential for disturbance and overlapping deposits resulting in cross-component contamination. SunWatch appears to have been occupied only once by the Fort Ancient people, which is rare at Fort Ancient sites which were often reoccupied. SunWatch represents one of the most intensively investigated Fort Ancient villages, with tightly controlled excavations of about 60% of the settlement. The site's fragile archeological remains were largely intact and extraordinarily preserved due to the relatively neutral soil and the flood deposits that protected the village remains from historic plowing and concealed it from looters.

Because of the extensive investigations, SunWatch offers the unique opportunity to examine the intra-site relationships of various parts of the village. The archeological remains can be analyzed in terms of spatial distribution, community planning, social organization, and households, as well as through research in ethnobotany, zoo-archeology, ceramics studies, economic anthropology, archaeoastronomy, paleopathology, stable isotope ratio analysis (SIRA), lithics, and human anthropology. The investigations have resulted in a collection that includes well provenienced faunal specimens, ceramics, chipped-stone artifacts, freshwater mollusks, marine shells

imported from the Gulf of Mexico, charcoal samples suitable for carbon-14 dating and wood identification, flotation samples, burials (NAGPRA compliant), and all of the accompanying field notes, profile maps, square sheets, photographs, and slides.

Comparison of Serpent Mound to Geoglyphs in Other Parts of the World:

Geoglyphs in the form of animal or human effigy mounds, or intaglios, are known from sites all over the world. The Lines and Geoglyphs of Nasca and Pampas de Jumana is the only such site to be inscribed on the World Heritage List. Other examples include the Uffington Horse (UK), the Cerne Abbas Giant (UK), the Serpent Mound at Loch Nell (UK), the Serpent Mound at Rice Lake (Ontario, CA), Effigy Mound National Monument (Iowa, USA), and the Blythe intaglios (Arizona and California, USA).

David Bourdon, in *Designing the Earth: the human impulse to shape nature* (Abrams, 1995) refers to the Serpent Mound as "one of the largest serpent effigies anywhere in the world." Also, it differs from many of the documented geoglyphs in being formed as a mound rather than being delineated by the excavation of an outline.

From a global perspective, such monumental effigies usually are erected to honor, placate, or solicit aid from powerful supernatural beings or forces. Although it may be difficult or impossible to empirically test aspects of this interpretation for Serpent Mound, it is consistent with and, in fact, harmonizes the available archeological evidence with Native American oral traditions.

Comparison of the SunWatch Site to Contemporaneous Sites around the World:

Many contemporary cultures around the world included communities that were leading lives very similar to the Fort Ancient inhabitants of southern Ohio.

By around A.D. 1000 many world cultures had domesticated crops that they relied on as the primary sources of their subsistence. The economies of places like Medieval Europe, Imperial China and the classic Mayan centers of Mesoamerica depended in large part on the rural, agricultural villages that supplied the food and other resources for the more urban areas, allowing others to specialize in occupations not related to subsistence. In these areas the smaller, agrarian-based communities were expected to produce a surplus of provisions that could be used to feed those engaged in other facets of society. Even the contemporaneous sites in the United States already inscribed on the World Heritage List (Chaco Culture, Mesa Verde and Cahokia) appear to be representative of societies more complex than the Fort Ancient which had specialists in many professions.

While members of Fort Ancient communities did engage, at least on a part time basis, in occupations outside of subsistence needs, they do not appear to have developed a highly specialized, stratified society where elite classes controlled the economic resources and

were completely removed from the subsistence sector. While Fort Ancient villages like SunWatch were certainly aware of and interacted with surrounding communities, and may well have shared in subsistence and ceremonial duties and obligations, they do not appear to have been involved in a resource redistribution system where they were subject to the rule of an absentee emperor, landlord, or other authority.

In this sense the Fort Ancient inhabitants of southern Ohio appear to be representative of a smaller scale, less complex form of social organization in which each settlement operated independently in order to provide the needs of the local community.

3.d. Integrity and/or Authenticity

Explanation: As with a site's international significance, the clear intent of this requirement is that a World Heritage Site's authenticity or integrity must rise to a superlative level. Thus, for example, it is quite important to understand that reconstructions of historic structures or sites or largely restored ecosystems will usually be disqualified from inscription in the World Heritage List.

Cultural property

Authenticity: Does the property retain its original design, materials, workmanship and setting?

YES: _____X_____ NO: _____

Comment:_____

Serpent Mound:

Serpent Mound retains its original design, materials, workmanship and setting. This has been demonstrated by limited archeological testing of embankment walls during the 19th and 20th centuries. Although there has been some restoration of Serpent Mound following some years of cultivation, the restorations were undertaken by the archeologist who had made the first systematic examination of the mound by selectively excavating trenches across it at various points and who had available to him the 1848 Squier and Davis map and survey made prior to any disturbance. More recent excavations have confirmed the accuracy of the restoration in at least one location. These investigations allow us to estimate that as much as 50-70% of the mound structure is original.

SunWatch Site:

Due to the excellent preservation of the archeological remains and the controlled excavations at SunWatch the site retains an extraordinary amount of authenticity. Excavation identified the precise location of the structures and other features at the site as well as evidence of the materials used in the original construction. The structures at SunWatch are authentic reconstructions based on the archeological remains and historic documentation of regional Native American structures. The remains of structures such as

those that were present during the occupation of SunWatch do not preserve well archeologically due to the materials used to build them, in this case mud (daub), grass and wood. With a site such as SunWatch, lacking earthworks or other above ground architectural remains, the reconstructions have provided an engaging platform from which to introduce visitors to what life was like in the Great Miami River Valley for Ohio's prehistoric inhabitants.

Integrity: Do the authentic material and spatial evidence inside the proposed boundaries remain in sufficient quantity to convey the full significance of the site? To tell the full story of why the site is outstanding?

YES: X NO:

Is the integrity weakened by the intrusion of discordant and/or abundant elements or buildings that are unrelated to the significance and detract from the visual unity of the place?

YES: NO: X

Comment: _____

Serpent Mound:

Serpent Mound is preserved within its original landscape context on the top of a bluff projecting into the valley of Ohio Brush Creek. The surrounding countryside is rural forest and farm fields with little development to adversely affect the viewscape.

Serpent Mound retains its integrity in terms of the setting, original design, materials, and workmanship. The only intrusions of discordant elements to the setting are those facilities built to provide visitor access and site interpretation (museum, park manager residence, park roads, picnic shelter) and these are situated well away from the effigy, with the exception of a metal viewing tower installed by the Ohio Historical Society in 1908 to allow visitors to obtain an "aerial" view of the mound and more clearly appreciate its form.

The integrity of the mound has been demonstrated by comparison of modern maps and aerial photographs with historic maps and early 20th century aerial photographs. In addition, limited excavations in 1991 established that much of the original mound structure remains intact. These excavations, combined with a study of early maps, also demonstrate that the 19th century restorations have not significantly altered the original shape and form of the embankment.

Although we cannot know with certainty how the effigy mounds were maintained and presented in antiquity, it is likely that the surfaces were covered in prairie grass, which would have been burned off periodically so the effigy could be distinguished. This

strategy is not practical in this setting today, but the careful mowing results in a presentation that may not be too different from what ancient Native Americans experienced several weeks following the intentional burning of the covering prairie grass.

SunWatch Site:

The SunWatch site is preserved in its original setting along the banks of the Great Miami River. The surrounding area has been subjected to some development, but the locational integrity of the site is retained by the fact that the site is buffered from surrounding facilities by woodlands and undeveloped acreage that provide a setting of apparent isolation.

Due to the excellent preservation conditions at SunWatch the archeological site retains its integrity of place and the provenience data of the excavated material retains its integrity as well. Due to the intact integrity of the design of the village preserved in the archaeological record, the reconstruction of the village was possible, providing an invaluable first hand glimpse into the Fort Ancient period. The concentric rings and concomitant village layout are the primary factors in relaying the story of the villagers to the public.

Note that that there can be authenticity without integrity, as in a highly eroded archeological ruin. There can also be authenticity with full integrity of materials, but seriously undermined by the overwhelming presence of newer or inappropriate elements.

How do authenticity and integrity compare for this property?

Serpent Mound:

The integrity of Serpent Mound was somewhat degraded by 19th century cultivation, looting, and limited archeological excavations. (Putnam only excavated a few trenches across the mound and the 1991 excavations were limited to reopening a portion one of Putnam's original trenches.) Putman restored the effigy with meticulous care and it demonstrably preserves a significant core of intact deposits. Therefore, while the integrity has been somewhat compromised in a few portions of the embankment, the authenticity has been maintained to a high degree.

SunWatch Site:

The authenticity of the SunWatch site is based on the integrity of the material archeological remains and the records from the archeological excavation. Due to the fact that the village deposits were capped by 25-30 cm (10-12 inches) of flood deposits the site was buried deep enough to avoid extensive damage from historic plowing on the property. The flood deposits and historic settlement and use of the property also limited the possibility of looting or other undocumented activity. The tightly controlled

excavations provide excellent locational information for the archeological deposits and features that were recovered and offer an exceptional baseline for the interpretation and reconstruction of the site.

Repairs: If repairs have been made, were they carried out using traditional materials and methods? If yes, please discuss. If not, please explain the methods used and why.

YES: X NO:

Comment:

Serpent Mound:

The restoration of the mound in the 19th century primarily involved scraping up material from the adjacent ground surface. This soil likely represented much of the soil that had eroded off the effigy over time due to erosion, cultivation, and other disturbances of its original form. It is likely that some fill obtained from nearby was used to achieve the dimensions originally recorded for the mound.

SunWatch Site:

The structures at SunWatch are authentic reconstructions based on the archaeological remains and historic documentation of regional Native American structures. Structures such as those that were present during the occupation of SunWatch do not survive well archaeologically. With a site such as SunWatch, lacking earthworks or other above ground architectural remains, the reconstructions provide an engaging platform from which to introduce visitors to what life was like in the Great Miami River Valley for Ohio's prehistoric inhabitants almost 300 years before Columbus found his way to the Americas. The reconstructions convey an accurate image of the original construction. Using the archeological evidence, the structures at SunWatch were rebuilt with grass lath and mud daub walls on a wood post frame with grass thatch roofs, also on a wood post frame. Upright posts were placed into the 800 year old postholes and these were tied together by running horizontal willow posts around these, strapping those on with the bark peeled from the willow posts. Once these horizontal members were added thin bundles of prairie grass were strapped to the frame with the mud daub being applied to the interior and exterior of the walls to finish them off. Once the walls were finished larger bundles of prairie grass were bound to the roof in layers to finish them.

4. STATE OF PRESERVATION AND FACTORS AFFECTING THE PROPERTY

4.a. Present state of preservation of the property

Cultural property

What is the present state of preservation of the property (including its physical condition and preservation measures in place)?

Serpent Mound:

The present state of the property is excellent. Erosion is monitored and controlled by keeping visitors from walking on the effigy. The terms of the gift of the site from Harvard University to the Ohio Historical Society require that the Society provide "perpetual care" for the property. All work undertaken at the site by the Society meets the Secretary of the Interior's Standards for Historic Preservation Projects. The property is large enough to provide a suitable setting for the effigy. However, during 2007-08 the Ohio Historical Society will undertake a master plan to determine if additional land needs to be acquired to provide adequate protection for the site from incompatible development.

SunWatch Site:

SunWatch is in a very stable condition today. Erosion is not a factor at the site due to its location on a flat terrace just above the Great Miami River. While the site is located in the floodplain it is located in an area that does not flood with great frequency due to flood control measures instituted during the last century. Access is limited to visitors during public hours and after hours the entire property is gated with a six-foot chain link fence that surrounds the SunWatch site and a second gate obstructing the entrance road to the site.

Are there any recent or forthcoming planned major repair projects? Are there any major repairs needed to buildings or structures that have not been planned or financed?

Serpent Mound:

None planned for cultural resource. Improvements are planned for visitor facilities, including restrooms and museum.

SunWatch Site:

The only projects planned for the SunWatch Site are the continued maintenance and reconstruction of the existing village features. There are currently 5 structures, the center pole complex and segments of the stockade surrounding the village that have been rebuilt. Current plans include the maintenance and reconstruction of these features. Occasionally minimal, targeted excavations are conducted to continue research into the Fort Ancient period at SunWatch. A recent addition to the interpretive center, completed in June of 2006, added lecture rooms, office space, additional rest rooms, and a kitchen to the Interpretive Center. The Dayton Society of Natural History has no plans to expand the facility any further.

4b. Factors affecting the property

If there are known factors likely to affect or threaten the outstanding universal values of the property or there any difficulties that may be encountered in addressing such problems through measures taken, or proposed to be taken, please use the following is a checklist to help in identifying factors.

(i) Development Pressures (e.g., encroachment, modification, agriculture, mining)

Are there development pressures affecting the property? Or major changes in traditional land use? Or demographic shifts, especially in sites still in the hands of the descendants of their creators, or, for example, traditional ethnic communities.

YES: ____ NO: X

Comment:

Serpent Mound:

At this time, there are no development pressures; however, there is no local zoning. Surrounding properties are used for agriculture or single-family homes on small parcels (\pm 4 ha).

SunWatch Site:

There are no currently pending or proposed developments that will impact SunWatch. The area around SunWatch is unlikely to be subjected to developmental pressures in the future due to the fact that it is located in a primarily industrial area. The site is bordered on the north and west by a sewage treatment plant, on the east by the Great Miami River, and on the south by an abandoned junkyard. The amount of acreage separating SunWatch from the neighboring properties combined with woodland growth surrounding the property shields and isolates the site from visual disturbances or detractions.

(ii) Environmental pressures (e.g., pollution, climate change, desertification)

Are there major sources of environmental deterioration currently affecting the property?

YES: ____ NO: X

Comment:

(iii) Natural disasters and risk preparedness (earthquakes, floods, fires, etc.)

Are natural disasters likely to present a foreseeable threat to the property? If so, are there available background data (e.g., for a property in a seismic zone, give details of past seismic activity, or the precise location of the property in relation to the seismic zone, etc.)

YES: ____ NO: X

Comment:

Are there contingency plans for dealing with disasters, whether by physical protection measures or staff training?

YES: ____ NO: X

Comment:

Serpent Mound:

The site is not subject to flooding and, because there are no trees on the effigy mound, there is little danger from tornadoes or forest fires, which are very rare in this region.

SunWatch Village:

Due to measures taken by the Miami Conservancy District after a disastrous flood in 1913, there is minimal chance of flooding damaging the SunWatch site. Dam construction and river channeling following the 1913 flood effectively eliminated the possibility of a reoccurrence of such an event. While tornadoes are somewhat common in southwest Ohio, they pose little threat to the SunWatch site where intact subsurface archeological deposits remain protected in the ground. While such disasters could destroy parts of the reconstructed village, thorough excavation and reconstruction records would provide for an accurate rebuilding of these structures in the case of such an event.

(iv) Visitor/tourism pressures

If the property is open to visitors, is there an established or estimated "carrying capacity" of the property?
Can it absorb or mitigate the current or an increased number of visitors without significant adverse effects?

YES: ____ NO: X

Comment:

Serpent Mound:

Current visitation is about 18,600 annually, which the site is able to accommodate easily. Visitation in the past was much higher when there were no charges for parking and picnicking was very popular. There was no adverse effect. It is anticipated that substantial increases could be accommodated without negatively impacting the site.

SunWatch Village:

SunWatch has averaged approximately 21,000 visitors annually over the last 5 years. Past visitation has reached as many as 38,000 visitors in a single year. The majority of SunWatch visitors attend during the school year months of April, May, October, and November when SunWatch averages over 100 school children per day. Some special

events can draw thousands of visitors over a weekend. The SunWatch facility is perfectly suitable to serve crowds of this size or larger. It is not expected that any increase in visitation will significantly impact the physical integrity of the site. One of the reasons for this is that visitors are directed to stay on marked paths and within the excavated portions and boundaries of the reconstructed features of the site. While this can be difficult to enforce at all times, visitors generally do follow these guidelines as they are generally with a tour guide or are visible from the interpretative center. It is not uncommon that individuals or small groups deviate from this, though they pose little actual threat to the archeological remains.

(v) *Other*

Are there any other risks or threats that could jeopardize the property's Outstanding Universal Values?

YES: ____ NO: X

Comment:

5. PROTECTION AND MANAGEMENT

5.a. Ownership

Provide the name(s) and addresses of all owners:

Serpent Mound:

Ohio Historical Society
1982 Velma Avenue
Columbus, OH 43211

If any of these owners are corporations or other nongovernmental entities, identify which are public and which private. Identify any traditional or customary owners.

Public organization owners:

Private organization owners: Ohio Historical Society

(The Ohio Historical Society, a 501(c)3 corporation, is by law the State's partner in providing history services to the public.)

Traditional or customary owners: none identified

If there are any other authorities with legal responsibility for managing the property, provide their names and addresses:

SunWatch Site:

City of Dayton
101 West Third Street
Dayton, OH 45402

If any of these owners are corporations or other nongovernmental entities, identify which are public and which private. Identify any traditional or customary owners.

Public organization owners: _

Private organization owners:_____

Traditional or customary owners: none identified

If there are any other authorities with legal responsibility for managing the property, provide their names and addresses:

The Dayton Society of Natural History
2600 DeWeese Parkway
Dayton, Ohio 45414

The Dayton Society of Natural History is a 501(c)3 private, not for profit corporation. The property is owned by the City of Dayton which leases it to the Dayton Society of Natural History under the provision that the society develop and restore the site, utilize it as a research and laboratory facility, and open the village to the public on a non-discriminatory basis, all of which have been accomplished. The original 25-year lease between the City of Dayton and the Dayton Society of Natural History was executed in 1982 and renewed in 2006, 1 year early. The stipulations in the lease call for its renewal every 10 years upon the expiration of the previous lease as long as the Society continues to utilize the property in the manner stated in the original contract.

For properties having multiple owners, is there any representative body or agent, which speaks for all owners? If so, does that representative body or agent have authority to act on behalf of all the owners? If so, provide the name and address of that representative body or agent:

Are there any restrictions on public access to the property?

Explanation: Public access is not required for inclusion in the World Heritage List. Policies in effect should be explained, however.)

YES: X NO: _____

Comment:

Serpent Mound:

Deed restrictions require that the site be open without charge to the public. Parking fees are charged. The grounds and visitor facilities are open on an established schedule. The park is closed during the Thanksgiving, Christmas, & New Year's Day holidays.

SunWatch Site:

The lease agreement between the City of Dayton and the Dayton Society of Natural History requires the Society to develop and restore the site, utilize it as a research and laboratory facility, and open the village to the public on a non-discriminatory basis. The interpretive center and reconstructed village are open to the public on a set schedule (Tuesday-Sunday) that is consistent with access schedules of other similar sites. An admission fee is charged for visitors. When the property is closed to the public the site is secured by fencing and locked gates. SunWatch is closed to the public during major holidays including Easter, Thanksgiving, Christmas, and New Years Eve and New Years Day.

5.b. Protective designations

What are the principal existing (and pending) legal measures of protection that apply to the property?

Explanation: List, but do not attach copies of, all relevant known or proposed legal, regulatory, contractual, planning, institutional and/or traditional measures that affect the status of the property: e.g., national park, wildlife refuge, historic monument, zoning, easements, covenants, deed restrictions, State and local historic preservation ordinances and regulations, and the like.

List of measures: _____

Give the title and date of legal instruments and briefly summarize their main provisions. Provide the year of designation and the legislative act(s) under which the status is provided.

Titles, dates, and brief summaries of legal instruments:

State Law: Ohio Revised Code, Section 2927.11 (A)(3) prohibits a person, without privilege to do so, from purposely defacing, damaging, polluting, or otherwise physically mistreating any historical or commemorative marker, or any structure, Indian mound or earthwork, cemetery, thing, or site of great historical or archeological interest. (B) Declares that whoever violates this section is guilty of desecration, which in the case of subsection (A)(3) is a misdemeanor of the second degree.

Serpent Mound:

Deed Restriction: Deed from Harvard University to Ohio Archaeological and Historical Society, 6 October 1900, requires perpetual care.

State Law: Ohio Revised Code, Section 149.30, requires that the Ohio Historical Society maintain and operate a system of state memorials (including properties owned by OHS) and requires legislative approval for the transfer or sale of Society property if the State has a "financial interest" in the property.

SunWatch:

Lease Agreement: The original 25 year lease between the City of Dayton and the Dayton Society of Natural History was executed in May of 1982 and renewed in 2006, 1 year early. The stipulations in the lease call for its renewal every 10 years upon the expiration of the previous lease as long as the Society continues to utilize the property in the manner stated in the original contract. As part of this lease the city also agreed to vacate the southern portion of West River Road that bisected the eastern part of the site, to minimize the vehicular and pedestrian traffic through the area, and hence potential damage to the site due to looting or vandalism.

Are the protections in perpetuity or are there potential gaps in the protection?

YES: X NO:

Comment: _____

Are there any traditional ways in which custom safeguards the property?

YES: NO: X

Comment: _____

5.c. Means of implementing protective measures

Will the owner(s) be responsible for ensuring that the nominated property will be protected in perpetuity, whether by traditional and/or statutory agencies? If no, identify who will be responsible.

YES: X NO:

Responsible entity other than the owner: _____

What is the adequacy of resources available for this purpose? Please briefly explain your reasoning.

Serpent Mound:

Resources at current levels are adequate for the long term care of the cultural resource. Current levels of funding limit public access and the care of visitor facilities.

SunWatch Site:

Access to the SunWatch site is regulated by fencing that surrounds the property and locked gates that secure the property when it is not open to the public. Additionally, an on site caretaker lives in an apartment attached to the interpretive center. Views from the apartment overlook both the entry road to the property and the SunWatch site itself, providing an unobstructed view of the site and several of the access points to the site, and offering the best possibility for the early detection of looters, vandals or other trespassers.

5.d. Existing plans related to municipality and region in which the proposed property is located (e.g., regional or local plan, conservation plan, tourism development plan)

Explanation: List, but do not attach, plans of which you are aware that have been officially adopted or are currently under development by governmental or other agencies that you believe directly influence the way the property is developed, conserved, used or visited. Include the dates and agencies responsible for their preparation and describe their general nature, including whether they have the force of law. It is recognized that this information may be difficult to compile and that it may be difficult to decide what to include, but the information will be very useful in determining how well the property is protected.

5.e. Property management plan or other management system

Is there a formal management plan or other management system for the property? If yes, when was it last updated? If not, is one in preparation and when will it be completed? *(It is not necessary to provide copies, but a summary can be included if one is available.)*

YES: ____ NO: X

Comment:

Serpent Mound:

At the present time, no management plan is in place; however, funds were appropriated in December 2006 to create a master plan and a historic site management plan for the site. It is scheduled to be completed by 30 June 2008.

SunWatch Site:

Is this management plan or other management system being effectively implemented?

Comment: _____

Because monitoring the condition of a property is not essential to a decision as to whether a property meets the basic qualifications for nomination to the World Heritage List, no information about the property's monitoring program is being requested at this time. If the property is subsequently added to the U.S. Tentative List, a set of key indicators for assessing the property's condition, the arrangements for monitoring it, and information on the results of past monitoring exercises will be required to complete the nomination of the property for inscription on the World Heritage List.

7.a Photographs, slides, and other audiovisual materials

Serpent Mound:

Location map showing the locations of Serpent Mound in Ohio

Squier and Davis map of Serpent Mound

Holmes map of Serpent Mound

Map from *The Century* magazine

CERHAS image of Serpent Mound

Aerial photograph of Serpent Mound

Diagram of solar alignments at Serpent Mound

Profiles of excavations at Serpent Mound

Photograph of conical mound

Illustration of artifacts excavated from conical mound

Photograph of elliptical mound

Illustration of artifacts from elliptical mound

Photographs of visitor facilities at Serpent Mound

SunWatch Site:

Aerial photo showing SunWatch property boundaries

SunWatch Site Map with excavation grid

SunWatch site map showing activity rings in village

SunWatch site map depicting West River Road along east side of site

Aerial photo of SunWatch site with excavations grid and features depicted

Aerial photo of SunWatch showing surrounding area

Dayton South, Ohio USGS Topographic Quadrangle 1966 (1991) showing SunWatch (33MY57) location

Aerial photo of SunWatch site showing the Kettering-Heilman Interpretive Center to the north of the site

Aerial photo of SunWatch site showing the excavation grid, features and the Kettering-Heilman Interpretive Center to the north of the site

SunWatch Village, view to south from the Heilman-Kettering Interpretive

Shadow falling on the Big House door marking the Planting/Harvesting alignment, view to west

The Heilman-Kettering Interpretive Center at SunWatch

Ceramics exhibit in the Heilman-Kettering Interpretive Center at SunWatch

Village Diorama in Heilman-Kettering Interpretive Center, left is north

Village Diorama in Heilman-Kettering Interpretive Center Illustrating solar alignments that fall to the west side of the village

SunWatch site map showing astronomical alignments in village

If recent images (prints, slides and/or, where possible, electronically formatted images, videos and aerial photographs) are available that give a good general picture of the property, please provide a few photographs and/or slides. If available, film/video, or electronic images may also be provided. They should give a good general picture of the property and illustrate the qualities/features that you believe justify the nomination of the property to the World Heritage List. (Ten views or so should be adequate for all but the most complicated properties.)

Please label the images you supply and provide a separate list of them here, including the photographer's name. Please do not include any copyrighted images or other images to which you do not possess the rights or do not have permission.

Images being supplied and names of their authors:

8. CONTACT INFORMATION

8a. Preparer/Responsible Party for Contact:

Serpent Mound:

Name: Bradley T. Lepper, PhD

Title: Curator of Archaeology

Address: Ohio Historical Society, 1982 Velma Ave

City, State/Territory, Zip Code: Columbus, OH 43211

Telephone: (614) 297-2642

Cellular phone: _____

Preferred Days/Hours for Contact: _____

Fax: 614-297-2455

E-mail and/or website: blepper@ohiohistory.org; www.ohiohistory.org

SunWatch Site:

Name: Andrew Sawyer M.A., RPA

Title: Site Manager/Site Anthropologist

Address: SunWatch Indian Village/Archaeological Park, 2301 West River Road

City, State/Territory, Zip Code: Dayton, Ohio 45418

Telephone: 937-268-8199 x111

Cellular phone:

Preferred Days/Hours for Contact: _____

Fax: 937-268-1760

E-mail and/or website: asawyer@sunwatch.org; www.sunwatch.org

8.b. Responsible Official or Local Institution/Agency

If different from the preparer above, provide the same information for the agency, museum, institution, community or manager locally responsible for the management of the property. In the case of public property, identify both the responsible official and the agency. If the normal reporting institution is a national agency, please also provide that contact information.

Serpent Mound:

Name: Dr. William K. Laidlaw, Jr.

Title: Executive Director, Ohio Historical Society

Address: 1982 Velma Ave.

City, State/Territory, Zip Code: Columbus, OH 43211

Telephone: 614-297-2350

Cellular phone:

Fax: 614-297-2352

E-mail and/or website: wlaidlaw@ohiohistory.org

SunWatch Site

Name: Mark Meister

Title: President and CEO, Dayton Society of Natural History

Address: 2600 DeWeese Parkway

City, State/Territory, Zip Code: Dayton, Ohio 45414

Telephone: 937-275-7431 x117

Cellular phone:

Fax: 937-275-5811

E-mail and/or website: mmeister@boonshoftmuseum.org

9. Signatures of All Owners of Private Properties or Authorizing Officials for Public Properties:

Explanation: No property will be included in the U.S. World Heritage Tentative List without the written concurrence of all its property owners. This is because U.S. law expressly forbids nomination of such sites. In addition, at the time of nomination, property owners must pledge to the legal protection or the development of legal protection of the property in perpetuity.

Signature

Typed or Printed Name

Dr. William K. Laidlaw, Jr.

Title

Executive Director, Ohio Historical Society

Date

9. Signatures of All Owners of Private Properties or Authorizing Officials for Public Properties:

Explanation: No property will be included in the U.S. World Heritage Tentative List without the written concurrence of all its property owners. This is because U.S. law expressly forbids nomination of such sites. In addition, at the time of nomination, property owners must pledge to the legal protection or the development of legal protection of the property in perpetuity.

Signature

Typed or Printed Name

Mark Meister

Title

President and CEO, Dayton Society of Natural History

Date